ACC.15
TCT@ACC-i2 | innovation in intervention

A1194
JACC March 17, 2015
Volume 65, Issue 10S

Non Invasive Imaging (Echocardiography, Nuclear, PET, MR and CT)

HIGH SENSITIVITY CARDIAC TROPONIN I CHANGES RELATED WITH T1 MAPPING IN PATIENTS WITH CHRONIC ISCHAEMIC HEART DISEASE WITHOUT LATE ENHANCEMENT GADOLINIUM BY CRM

Poster Contributions
Poster Hall B1
Sunday, March 15, 2015, 9:45 a.m.-10:30 a.m.

Session Title: Parametric Mapping of the Myocardium by CMR
Abstract Category: 18. Non Invasive Imaging: MR
Presentation Number: 1172-007

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Background: Detectable high sensitivity troponin I(hsTnI) is associated higher morbi-mortality in the general population and in patients with chronic coronary artery disease (CAD). Many mechanisms were associated with this chronic elevation: increased demand ischemia, microemboli or disturbances of cardiomyocite cell membrane. Several studies have showed that non-invasive extracellular volume (ECV) assessment using cardiovascular magnetic resonance (CMR) T1 mapping is a powerful tool to identify changes in interstitial myocardial and infarction areas. The association between hsTnI and ECV has not been investigated yet and the aim of this study was to determine this possible association.

Methods: 33 patients with multivessel CAD, normal left ventricle ejection fraction (LVEF), negative late enhancement (LGE) by CMR and a formal indication for CABG. All patients had hsTnI determined and CMR examination on 1.5 T MRI system before CABG. Cine-CMR with SSFP sequence for LVEF and LGE for myocardial fibrosis detection. The myocardial T1 times were determined with MOLLI technique before and 15 minutes after gadolinium administration. Myocardial ECV was calculated as formally described. Analyses were performed using CVi42 software. (Circle CVi, Calgary, CA).

Results: Clinical variables and LVEF were similar between the 2 groups. The T1 and ECV means were 1023.0 ± 48.9 and 24.7 ± 3.7, respectively. After ECV categorization in dichotomous variables (ECV ≤ 25% and > 25%), there was a significantly higher hsTnIconcentration in the group with ECV > 25% (0.011 vs 0.006, p=0.03). The myocardial native T1 was 1050.1 ± 53.6 (vs 1003.0 ± 34.3, VEC ≤25, p=0.002). However, there was no significantly linear correlation between ECV and hsTnI (r=0.215, p=0.22).

Conclusion: In this study hsTroponin I levels were higher in patients with ECV>25, these new findings showing that troponin elevation in chronic patients may be related to a higher extracelullar volume, possibly through troponin leakage.